Tips for Addressing Math Anxiety
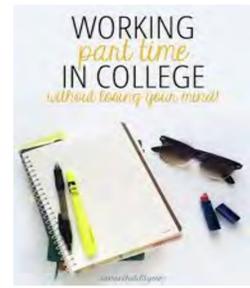
Research suggests that incorporating these strategies into your classroom can help address your students' math anxiety and improve performance.

Express Yourself

Expressing thoughts and feelings before a test or quiz can improve scores. Try leaving time for short writing or drawing exercises and watch for the difference.

Get Excited

The feeling of excitement is a close cousin to anxiety. Before a math test or lesson, try encouraging students to get excited and to make positive self-statements like, "I got this!"

Get Relaxed

On the flip side, leading students in simple breathing practices can lower anxiety and help students focus on their learning.

Visit mindresearch.org/blog/math-anxiety to read more about the studies.
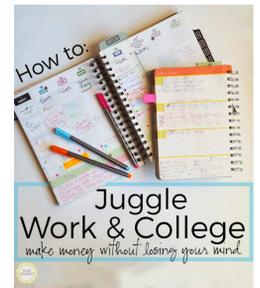
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Qualitative and Quantitative Approach to Examine the Effects of Math Anxiety on Learning Styles

by Amberly Salazar

Northern New Mexico College
Department of BAIS: CJ or PSYCHOLOGY

Abstract

This exploratory research analyzes math anxiety within a sample of NNMC math students by identifying anxiety related factors that contribute to poor learning styles resulting from lower dedication to academic studies within the part-time/full-time student population.

Statement of the Problem

The problem of this research is currently exploratory. Thus, it allows me as the researcher to collect data from Math classes at Northern New Mexico College with an interest to identify the relationship of math anxiety to learning.

Theory

The theory suspects that lower dedication to academic studies create anxiety for the student. This approach is an effective strategy for the researcher to support academic anxiety as well as finding accurate learning tools to meet successful academic performance.

Hypotheses

My hypothesis through this research is that there is a positive relationship between anxiety and the amount of academic dedication used for studies, such that an increase in anxiety will result in a lower amount of dedication to study. If my data does not support this theory, I will accept the null which is; that there is no positive relationship between anxiety and the amount of time dedicated to studies.

Data Collection & Methods

The sample used for this study was collected from students enrolled in math classes at Northern New Mexico College. Although a random sample is the best method to create data that is generalized to the population, because it eliminates any biases, the sample used is a purposive sample.

The sample below represents the sampled classes of: Engr 217L Physics for Engineers II (1.92%). Math 163E: Calculus II for Engineers (4.81%). Math 162: Calculus I (4.33%). Math 155: Trigonometry and pre-calculus (9.62%). Math 150: College Algebra (27.88%). Math 130: Intermediate Algebra (15.87%). Math 100N: Fundamentals of Mathematics (7.21%). Math 130L Accelerated Intermediate Algebra (7.69%). Math 145: Probability and Statistics (15.87%). Math 145: Web Probability and statistics (0.48%). Median-8.00. Mean-7.17. Standard deviation-4.23.

Data Analysis & Findings

Independent Variable:

The univariate quantitative graph below (see Table 3a) represents data results about how students feel about math or science, using the Likert scale to measure. In the variable (question) which states "I struggle" tests the hypothesis that those who have lower ability in math or science will be more likely to answer that they struggle. Most respondents said "A little bit". The question that states math and science concepts come easy answered "somewhat". The question that states, at first I don't get math and science answered "a little bit". Those that answered, I prefer science concepts to math said "not at all". "A great deal" answered that they liked that math has a concrete answer as well as math and science are fun for me.

Table 3a: Independent Variable

The univariate quantitative graph below (see Table 3a) represents data results about how students feel about math or science, using the Likert scale to measure.

Q12 How do you feel about your ability in math or science?
Answered: 13 Skipped: 0

Legend: not at all · a little bit · somewhat · very much · a great deal

Table 3b: Dependent Variable Math Anxiety

A univariate analysis looks at one variable or one survey question at a time for the purpose of description.

Data Analysis & Findings *cont'd*

Dependent Variable

A univariate analysis looks at one variable or one survey question at a time for the purpose of description. A univariate analysis takes the data and summarizes it by finding patterns. This analysis method is known as univariate distributions. In Table 3 below, the results of my dependent variable are given used to determine stress doing activities in Calculus math classes at Northern New Mexico College. The scale used in this method was the Likert scale.

The table presented (Table 3b, Dependent Variables) suggests that there is a 5.00 or 4.00 maximum of an overall statistic for anxiety in math. Majority of the calculus students rated their responses as, "somewhat" or "moderately."

	not at all (1)	somewhat (2)	moderately (3)	quite a bit (4)	very much (5)	Total	Weighted Average
Having to use the tables in the back of a math book.	53.85% 7	23.08% 3	15.38% 2	0.00% 0	7.69% 1	13	1.85
Thinking about an upcoming math test one day before.	23.08% 3	30.77% 4	15.38% 2	23.08% 3	7.69% 1	13	2.62
Watching a teacher work an algebraic equation on the blackboard.	53.85% 7	30.77% 4	7.69% 1	0.00% 0	7.69% 1	13	1.77
Taking an examination in a math course.	7.69% 1	38.46% 5	23.08% 3	23.08% 3	7.69% 1	13	2.85
Being given a homework assignment of many difficult problems which is due the next class meeting.	23.08% 3	15.38% 2	30.77% 4	15.38% 2	15.38% 2	13	2.85
next class meeting.	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0	0.00
Listening to a lecture in math class.	69.23% 9	23.08% 3	0.00% 0	0.00% 0	7.69% 1	13	1.54
Listening to another student explain a math formula.	46.15% 6	38.46% 5	7.69% 1	7.69% 1	0.00% 0	13	1.77
Being given a "pop" quiz in a math class.	23.08% 3	30.77% 4	30.77% 4	7.69% 1	7.69% 1	13	2.46
Starting a new chapter in a math book.	53.85% 7	30.77% 4	7.69% 1	0.00% 0	7.69% 1	13	1.77
Overall, How anxious are you about math?	30.77% 4	38.46% 5	23.08% 3	0.00% 0	7.69% 1	13	2.15

Basic Statistics

	Minimum	Maximum	Median	Mean	Standard Deviation
Having to use the tables in the back of a math book.	1.00	5.00	1.00	1.85	1.17
Thinking about an upcoming math test one day before.	1.00	5.00	2.00	2.62	1.27
Watching a teacher work an algebraic equation on the blackboard.	1.00	5.00	1.00	1.77	1.12
Taking an examination in a math course.	1.00	5.00	3.00	2.85	1.10
Being given a homework assignment of many difficult problems which is due the next class meeting.	1.00	5.00	3.00	2.85	1.35
next class meeting.	0.00	0.00	0.00	0.00	0.00
Listening to a lecture in math class.	1.00	5.00	1.00	1.54	1.08
Listening to another student explain a math formula.	1.00	4.00	2.00	1.77	0.89
Being given a "pop" quiz in a math class.	1.00	5.00	2.00	2.46	1.15
Starting a new chapter in a math book.	1.00	5.00	1.00	1.77	1.12
Overall, How anxious are you about math?	1.00	5.00	2.00	2.15	1.10

Conclusions

My findings show that there was indeed a positive relationship between anxiety and the amount of academic dedication used for studies, such that an increase in anxiety will result in a lower amount of dedication to study. As an exploratory researcher, my data suggest that majority of my sample size came from the part-time student population who had a 62.50% response rate for struggling a little bit in their academic performances and stress doing activities in Calculus math classes. Therefore; I will in-fact reject the null which is; that there is no positive relationship between anxiety and the amount of time dedicated to studies.

Ethics

This research will adhere to the National Research Act created by the National Commission for the Protection of human subjects of Biomedical and Behavioral Research that utilizes three key principles: Respect for persons, Beneficence, and justice. This Survey will be given to those who voluntarily accept to participate. They were informed of the confidential and anonymity process.
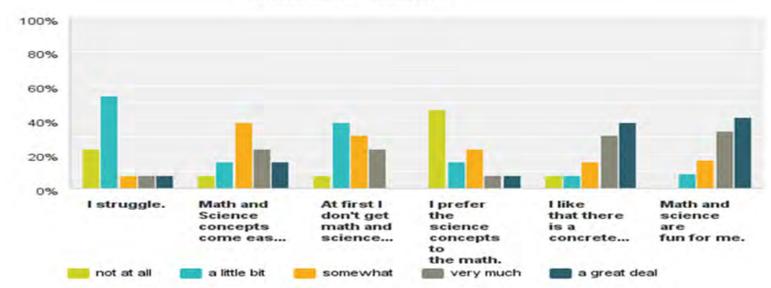
References

Babbie, E.R. (2016). Practice of social research/ Earl Babbie (14th ed..). Boston, MA: Cengage learning.

Acknowledgements